

Claims

- [c1] What is claimed is: A fluid stream sampler for variable flow rate controlled air sampling, the sampler comprising:
- (a) a housing body having a vacuum outlet opening formed therein, a sampling port inlet formed therein, and a flowpath extending between the outlet and the inlet;
 - (b) a volumetric flow rate indicator disposed in the flowpath between the vacuum outlet opening and the sampling port inlet;
 - (c) a hose, fluidly connected at one end to a vacuum source, has a fitting at the other end that is insertable into the vacuum outlet opening;
 - (d) an adjustable damper panel interposed in the flowpath regulates the vacuum pressure within the housing body;
- whereby a vacuum imparted by the vacuum source directs a fluid stream through the housing body along the flowpath between the vacuum outlet opening and the sampling port inlet such that, upon moving the damper panel to a desired position within the flowpath, a desired volumetric flow rate is achieved as measured by the indi-

cator, the desired volumetric flow rate corresponding to a preferred flow rate specified for a fluid constituent sampling medium interposed in the flowpath at the sampling port inlet.

[c2] The fluid stream sampler of claim 1 wherein the vacuum source is a conventional household vacuum cleaner.

[c3] The fluid stream sampler of claim 1 wherein the volumetric flow rate indicator is a rotameter.

[c4] The fluid stream sampler of claim 1 wherein the fluid constituent sampling medium is either a split impaction cassette, a micro porous filter cassette or a gas bag.

[c5] The fluid stream sampler of claim 4 wherein the medium is capable of collecting at least one of particulate for subsequent biological and chemical analysis.

[c6] The fluid stream sampler of claim 4 wherein the gas bag medium comprising:

(a) a vacuum chamber having a inlet port formed therein and a outlet port formed therein;

(b) a gas bag disposed in the vacuum chamber between the inlet port and the outlet port;

(c) a valve disposed in the gas bag, having a inlet exterior to the bag and a outlet interior to the gas bag;

(d) a straw disposed in the valve, having a inlet exterior

to the vacuum chamber and a outlet interior to the gas bag;

whereby a vacuum imparted by the fluid stream sampler at the outlet port directs a pressure drop interior to the vacuum chamber and a pressure differential effect on the atmosphere interior to the gas bag, such that, a fluid stream is developed at the straw inlet through the valve and into the interior of the gas bag.

- [c7] The fluid stream sampler of claim 6 wherein the vacuum chamber is a conventional paper shipping tube.
- [c8] The fluid stream sampler of claim 6 wherein the valve is self-sealing.
- [c9] The fluid stream sampler of claim 6 wherein the gas bag is capable of collecting gaseous air for subsequent biological and chemical analysis.